[redacted] 25X1

16 June 1969

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MEMORANDUM FOR: Chief, Technical Services & Support Group

SUBJECT : Comments Regarding the IAS Study on Selected Target Printing (STP) Sizes

25X1 REFERENCE : [redacted] IAS - 89/69, 5 June 1969

1. The Development & Engineering Division has reviewed the subject study with considerable interest. We wish that we would see more documents of this type, since it clearly states a customer's operational requirements. The collected data will prove most useful in our analysis of future equipment requirements.

2. However, the recommendation for a 6" X 6.6" STP format is cause for concern to DED because of its impact upon future equipment developments. Such concern results because the selected format immediately excludes from consideration entire arrays of "off-the-shelf" hardware currently designed to handle and view 4" x 6" or other smaller standardized chip formats. Furthermore, the recommendation is restricted to 25X1 [redacted] while consideration should be given to a more versatile system capable of accommodating materials from the majority of existent and projected acquisition systems. Our ultimate goal, as is that of IAS, is to provide the interpreter with all the materials that he requires to perform his functions, and to do so in the most efficient and cost-effective manner possible.

3. With these facts in mind, we have carefully reviewed the rationale adopted by IAS in drafting their recommendation, and we have concluded that their estimates of the percentage of targets adequately covered by a 4" X 6" format are overly conservative. The basis for this conclusion is as follows: IAS's calculations were based upon an assumed scale of

25X1 [redacted]

25X1 [redacted] it does not appear realistic to use this figure for a mission average. (This is illustrated by the following table.)

25X1 [redacted]

[redacted]

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In the majority of cases, the camera is pointing not at nadir, but at areas to either the side of the vehicle path or is involved in sweeping from side to side in a scanning mode. In these operations, the slant range from the vehicle to the ground, not the height of the vehicle, is the effective altitude; as a consequence, the scale is constantly changing. In most cases, however, it is considerably smaller than

25X1 [redacted] an important consideration since the smaller the scale, the greater the area covered. We, therefore, logically conclude that a much higher percentage of IAS's targets can be satisfied within a 4" X 6" format, thus providing IAS with the information content that they need, without obviating the use of considerable "off-the-shelf" equipment. We are not restricting our thinking to a 4" X 6" format, but its advantages must be considered when we evaluate format recommendations.

4. It is not clear from IAS's memorandum to what depth they have investigated alternatives, but the following options should be considered:

(1) The possibility of covering those targets which cannot be adequately covered by one chip with more than one chip.

(2) Covering these targets with a chip of slightly reduced scale in order to adequately encompass the desired area. Of course, this option is highly dependent upon minimal losses in resolution and contrast during the optical printing process--problems currently designated for study under our FY-69 Chip Implementation Study.

(3) Providing imagery of the specific target in the form of a contact-printed, target-centered chip at mission scale with some loss in coverage, accompanied by an additional chip of smaller scale for the PI to exploit for contextual information.

5. In reviewing these alternatives, it must be realized that these special solutions would be required only for a very limited number of cases.

One further point. IAS expressed concern that a 4" X 6" format would prove unacceptable because the pair of scan angle marks (5.25 inches apart) would not be provided. There should be no fear

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in this regard, since any operational chip system would have to provide distinct reference marks which relate the chip to its correct position on the over-all frame format or mensuration on chips would be impossible. This is a minor technical problem, not an insolvable one.

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Chief, Development & Engineering Division, TSSG

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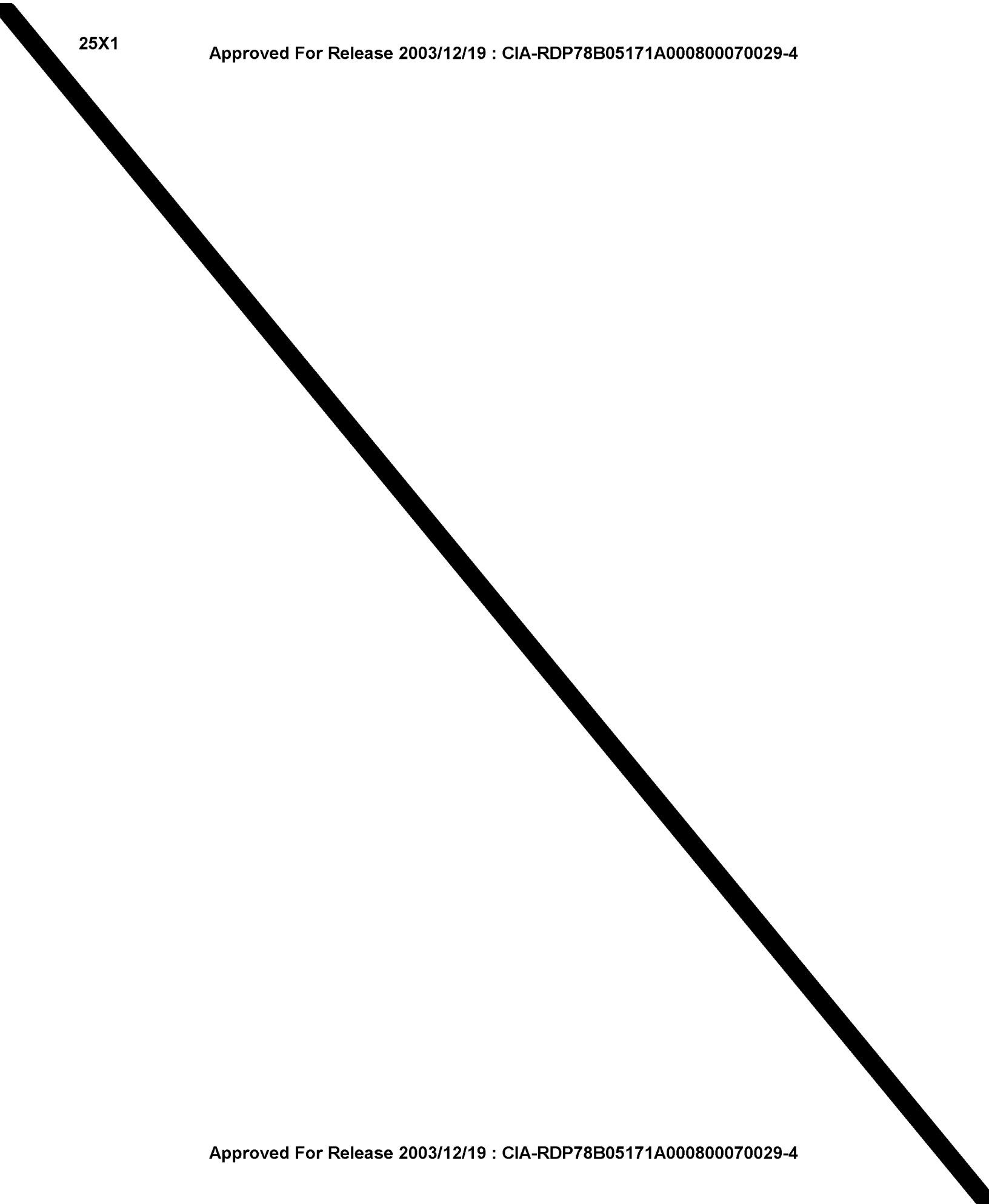

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